

# DHS Dimensions

A semiannual newsletter of the Demographic and Health Surveys project



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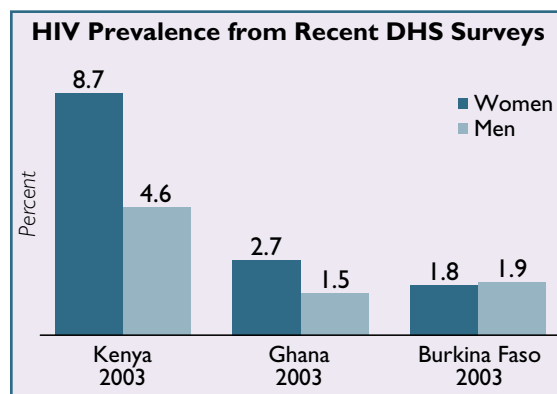
## DHS HIV Data Changing Global Estimates

DHS surveys are changing worldwide perceptions of HIV prevalence. New HIV prevalence results, obtained through population-based DHS surveys, are helping to improve estimates of the global AIDS burden. They also help calibrate estimates of HIV levels obtained from the ongoing sentinel surveillance of pregnant women.

Traditionally, HIV prevalence estimates have been derived from data from sentinel surveillance systems that monitored rates among pregnant women and high-risk populations using statistical systems. By collecting blood for HIV testing from representative samples of the population of men and women in a country, MEASURE DHS can provide nationally representative estimates of HIV rates. The linkage of DHS HIV test results to the full DHS survey record (without personal identifiers) allows for an in-depth analysis of the sociodemographic and behavioral factors associated with HIV infection.

HIV prevalence rates in Ghana, Kenya, and Burkina Faso are lower than previously thought, according to new HIV testing results from MEASURE DHS. In the 2003 Kenya DHS, HIV prevalence was found to be 7 percent, compared with the WHO/UNAIDS 2003 estimate of 9 percent. Almost three-quarters of eligible men and women agreed to undergo HIV testing as part of the 2003 KDHS, resulting in over 8,000 HIV tests. Results reveal that Kenyan women are particularly vulnerable to HIV infection: the prevalence rate among women age 20-24 is three times higher than among men of the same age. For both men and women, having more than one partner in the past 12 months is strongly associated with higher HIV prevalence. Results from the 2003 KDHS confirm the inverse relationship between male circumcision and HIV risk. Men who are not circumcised have an HIV prevalence rate of 13 percent, compared with only 3 percent among men who are circumcised.

The 2003 Ghana DHS reports that 2.2 percent of men and women are HIV positive (compared to 3.1 percent estimated by WHO/UNAIDS in the same year). Approximately 85 percent of eligible men and women in Ghana



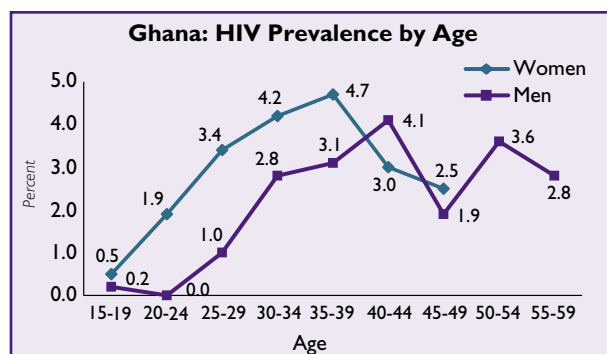
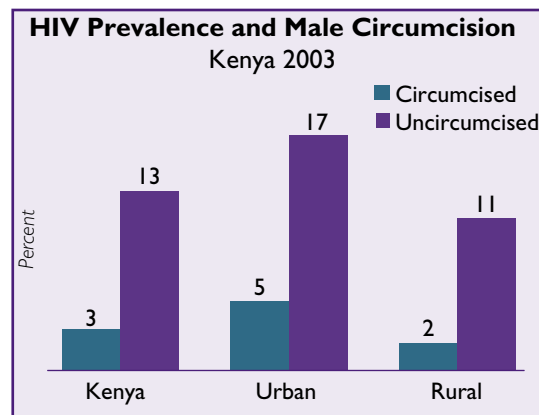
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## HIV Testing in DHS Surveys

The 2001 Mali DHS was the first Demographic and Health Survey to include HIV testing. Since then, MEASURE DHS has provided technical assistance to more than 15 countries to plan for surveys including an HIV testing component. The DHS HIV testing protocol provides for informed, anonymous, voluntary testing of women and men in the reproductive ages. The testing is simple; blood spots are collected on filter paper from a finger prick and transported to a laboratory for testing. Since the testing is anonymous, survey respondents cannot be provided with their results. However, all respondents are offered referrals for free voluntary counseling and testing (VCT) and AIDS educational materials. In some countries, mobile VCT teams follow-up after interviewers to counsel and test willing DHS respondents.

agreed to testing, resulting in over 9,000 HIV tests. As in Kenya, women are disproportionately burdened by HIV. Until the age of 40, women have markedly higher rates of infection than men. HIV prevalence in women is also associated with several behavioral factors. Women who are widowed, divorced or separated have much higher rates of HIV infection than those who are currently married or in a union or have never been in a marital union. Women who did not use a condom at last higher-risk sex in the last 12 months are twice as likely to be HIV infected as women who used a condom.

The recently released 2003 Burkina Faso DHS reveals an HIV prevalence of 1.8 percent, (the 2003 WHO/UNAIDS estimate was 4.2 percent), with men and women having almost identical rates of infection. Almost 90 percent of eligible persons agreed to DHS HIV testing, result-



ing in 8,600 HIV tests. HIV infection was found to be higher in urban areas (4.0 percent for women and 3.2 percent for men) than rural areas (1.2 percent for women, 1.6 percent for men).

Both sentinel surveillance and population-based data sources of prevalence data can and should be used. Population-based testing can only be undertaken every three to five years in most countries, because of the size and expense of the surveys. Sentinel surveillance testing is often reported annually, and provides a good benchmark for measuring progress over short time periods. In addition, population-based testing is dependent on the population's willingness to be voluntarily tested for HIV. In cases where the characteristics of those who agreed to be tested are different than those who refused testing, bias may result. The current DHS reports with HIV testing include analysis of non-response bias. In Kenya, Ghana, and Burkina Faso, initial analysis of non-response suggests that respondents not tested did not differ in meaningful ways from those tested. ■

## DHS Responds to the President's Emergency Plan

The President's Emergency Plan for AIDS Relief calls for prevention, treatment, and care for HIV-infected patients and orphans. MEASURE DHS survey instruments are designed to collect the data needed to monitor progress toward meeting the strategic goals set by the Emergency Plan, as well as goals adopted by several international groups. DHS surveys provide data for tracking the impact of the Emergency Plan at both the population (through DHS surveys and AIDS Indicator Surveys) and health facility levels (through the HIV/AIDS Service Provision Assessment Survey).

# Service Provision Assessment Surveys Focus on HIV/AIDS

Kenya and Guyana are the first countries to begin data collection for the HIV/AIDS Service Provision Assessment (SPA) survey. The new HIV SPA survey focuses specifically on HIV-related services. It will assess health facilities' capacity to provide high quality HIV services and meet the care and support needs of people living with HIV and their families. The survey is designed to measure indicators from the President's Emergency Plan for HIV/AIDS Relief and to track progress toward the Emergency Plan's goals.

## Comparing the HIV and Traditional SPA

DHS has conducted several "traditional" SPA surveys in the last five years. These surveys assess the general quality of health services, including child health, maternal health, family planning, and to some extent HIV/AIDS and sexually transmitted infections. Although not as comprehensive as the full-scale HIV SPA, previous SPA surveys in Rwanda, Egypt, Uganda and Ghana included a few HIV service indicators and have provided some insight into HIV-related services in these countries.

For example, results from the 2002 Uganda Health Facilities Survey indicate that 11 percent of health facilities have the capacity to provide voluntary counseling and testing (VCT), but only 6 percent can provide services to prevent mother to child transmission (PMTCT). Among facilities providing VCT, less than half had VCT guidelines or visual

aids for VCT. Just over half of facilities (52 percent) had a trained lab technician.

The 2002 Ghana SPA, which surveyed 428 health facilities, shows that 15 percent of facilities provide VCT, and only 13 percent can provide any clinical care in the treatment of HIV/AIDS. Of the 111 facilities that provided any HIV/AIDS services, 78 percent had infection control elements such as soap, water, and latex gloves, and less than half (41 percent) offered HIV testing.



Photo: Lutheran World Relief/  
Edward Reilly; Kenya

The HIV/AIDS SPA consists of two components. The facility inventory (consisting of 10 questionnaires or modules) collects information on infrastructure, staffing, facilities' capacity to provide VCT, PMTCT and laboratory services, availability of medicines and supplies, availability of guidelines and protocols for HIV/AIDS-related care, and care and support services.

The health worker interview collects information on training, experience, and supervision, as well as staff members' knowledge of critical elements related to the services provided.

HIV/AIDS SPA surveys are expected to involve the surveying of 250–500 facilities, including governmental and nongovernmental facilities. Facilities

ranging from district hospitals to stand-alone clinics are included. Fieldwork is expected to take about two months.

The HIV/AIDS SPA is still in the development phase. It is expected that after the data from the Kenya SPA and the Guyana HIV/AIDS SPA are available, and indicators have been calculated, a technical working group will be reconvened to review the findings and make adaptations in indicators and methods, if necessary. ■

**The new HIV/AIDS SPA survey measures health facility-based indicators from the President's Emergency Plan for HIV/AIDS and tracks progress toward the Emergency Plan's goals.**

## Indicators for Monitoring Programs in HIV/AIDS SPA Surveys

1. *Capacity to provide basic level HIV/AIDS services* (testing, pre and post counseling, TB, malaria and STI care, training of staff to provide basic interventions for prevention and treatment)
2. *Capacity to provide advanced-level treatment* (advanced care of people living with AIDS, systems to support antiretroviral therapy, inpatient care for people living with HIV/AIDS, conditions to support home services, postexposure prophylaxis)
3. *Availability of record keeping systems for monitoring HIV/AIDS care and support*
4. *Capacity to provide PMTCT services*
5. *Availability of youth-friendly services.*

MEASURE DHS assists countries worldwide in the collection and use of data to monitor and evaluate population, health, and nutrition programs. Funded by the United States Agency for International Development (USAID), MEASURE DHS is implemented by Macro International Inc., an Opinion Research Corporation company (ORC Macro), in Calverton, Maryland, with the Johns Hopkins University Bloomberg School of Public Health's Center for Communication Programs (Hopkins CCP), PATH, Casals and Associates, and Jorge Scientific Corporation. DHS Dimensions is published twice a year to provide information about the program and the status of DHS surveys. Send correspondence to MEASURE DHS, ORC Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, USA (tel.: 301-572-0200; fax: 301-572-0999; [www.measuredhs.com](http://www.measuredhs.com)). Project Director: Martin Vaessen.



# Domestic Violence Against Women Threatens the Health and Survival of Children

Domestic violence has an obvious impact on the health and wellbeing of the women being abused, but a new report shows that their children are also more likely than other children to have poorer health.

In September, MEASURE DHS released “Profiling Domestic Violence: A Multi-Country Study,” a comprehensive analysis of domestic violence in 9 developing countries

Children of abused mothers are more likely to be malnourished and less likely to be immunized than other children.

based on DHS data. Among the 9 countries in the study, the highest rates of domestic violence were found in Zambia, where nearly 50 percent of women who were ever married reported spousal or intimate partner violence. Reports of violence were also high in Colombia (44 percent) and Peru (42 percent). About one in three women in Egypt (34 percent), Nicaragua (30 percent), and Haiti (29 percent) reported some type of abuse. The lowest levels of abuse were found in Cambodia (18 percent), India (19 percent) and the Dominican Republic (22 percent). Violence during pregnancy was found to be particularly high in Colombia and Nicaragua (11 percent).

“We know women in violent situations often have poor health with some ending up as homicides and suicides, but this report also documents its impact on their young children,” said Sunita Kishor, Senior Gender Specialist at DHS. Whether it be in accessing their own health care, contraception, or care at childbirth, women with a history of abuse face added challenges to maintaining their own health as well as the health of their children.

DHS data suggest that women’s contraceptive use and pregnancy-related health care may be affected by violence. Unmet need for contraception and unwanted pregnancies were more common among women who had ever experienced violence. In seven of the nine countries studied, women who had ever experienced abuse were less likely to receive antenatal care during the first trimester of pregnancy.

Infant and child mortality rates are also higher among women who had ever experienced violence when compared with women who had not. The likelihood of having a non-live birth is dramatically higher for women who had ever experienced violence compared with those who reported no

history of violence. In Cambodia, Egypt, India, Nicaragua, and Zambia, all child mortality rates (based on deaths occurring between birth and age five) were higher for children of abused women, according to the report. Children of abused mothers are also more likely to be malnourished and less likely to be immunized than other children.

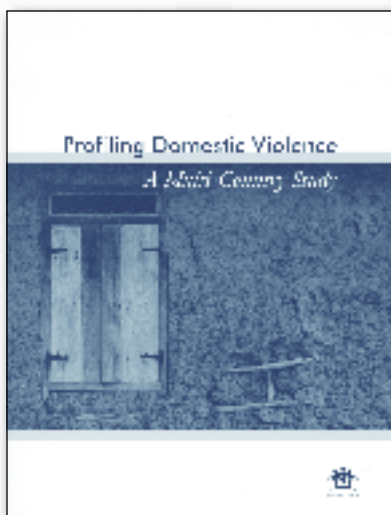
The most frequently reported acts of violence in the five countries for which these data are available were being pushed, shaken, targeted with a thrown object, slapped, or having one’s arm twisted. Many women experienced immediate physical consequences from the abuse, such as bruises, aches, and broken bones. Yet, in most cases, the majority of women did not seek help.

*Profiling Domestic Violence* also explores in some detail possible risk factors that make certain women more vulnerable to violence than others. In all countries, women who have been married more than once, or are divorced or

separated report higher rates of violence, suggesting that violence is a cause of the marriage dissolution. Women who married at a young age and who have multiple children are also more likely to report having experienced violence.

Gender roles and attitudes towards gender relations may also affect women’s likelihood of experiencing violence. According to this report, domestic violence is less common in households where men and women share responsibility for household decisions. In addition, in every country studied, women who agreed that there are circumstances under which it is acceptable for a husband to hit his wife were more likely to report having ever experienced violence.

“We hope this report can serve as a tool for program planners and policymakers as we work to end violence



Women who married at a young age and who have multiple children are more likely to report having experienced violence.

against women worldwide,” said Kiersten Johnson, a report co-author. “This violence has wide-ranging family and social consequences, as demonstrated by our data.” ■

This publication is available online in pdf format:  
<http://www.measuredhs.com/pubs/pdf/OD31/dv.pdf>

# Women's Empowerment: DHS Offers More Comprehensive Measures

Women's status, empowerment, and experiences of gender roles can now be measured in more depth through Demographic and Health Surveys. Historically, DHS surveys have provided information on fertility, women's and men's knowledge and use of family planning, maternal and child mortality, nutrition, health and health care, and HIV/AIDS, as well as household socioeconomic status. Enhancements to the DHS woman's and man's questionnaires and special modules permit the measurement of women's empowerment, levels of domestic violence, and female genital cutting.

Today DHS data provide an in-depth look at the life courses of women and men (for example, when they first have sex, marry, and have their first child, whether they work, and whether they control income and household decisions); at gender differentials in education and in children's health and health care; and at women's experience of various forms of gender-based violence.

The 1994 International Conference on Population and Development focused sharp attention on accounting for gender roles, needs, and relations when designing policies and programs that address population, health and nutrition issues. The HIV/AIDS epidemic has also highlighted the need to understand how gender inequalities in power, access, and resources affect the spread of infection.

DHS conducts program-relevant quantitative and qualitative research in the area of gender. Qualitative research

## Gender-Related Publications

Selected titles include:

- Profiling Domestic Violence: A Multi-Country Study
- Profil des femmes en Haïti (in French)
- Indicateurs de genre en Mauritanie (in French)
- Trends in Marriage and Early Childbearing
- Gender Preferences for Children
- Female Genital Cutting and Coming of Age in Guinea
- Coping With Pregnancy: Experiences of Adolescents in Ga Mashi, Accra
- The Status of Women: Indicators for Twenty-Five Countries
- Men's Fertility, Contraceptive Use, and Reproductive Preferences
- Focus on Gender: Collected Papers Using DHS Data

provides a flexible way to examine how the gender context affects outcomes such as women's disclosure of their HIV status or women's use of contraception. It is also effective in studying other sensitive gender issues, such as female genital cutting (FGC). For example, qualitative methods were used in a study of FGC in Guinea. Women were interviewed about their social preparation for adulthood, including the FGC procedure. Researchers also facilitated discussions between men and women on the topic of FGC. The qualitative interviews revealed different terms for FGC that would not have been captured through typical survey methods.

## Understanding Gender Through Data: DHS Training

DHS offers gender training that can be geared to a particular health or demographic outcome of interest (such as gender and HIV/AIDS); to a particular country context; or to meet other specific topics or organizational needs. A three and a half-day workshop held in Kathmandu focused on constructing gender indicators from the Nepal DHS to help integrate gender in the design and implementation of the USAID mission's country-specific strategic objectives and programs. A more intensive three-week, multi-country workshop at DHS headquarters in Calverton, Maryland explored how gender affects various population, health, and nutrition outcomes, including fertility and family planning, maternal and child nutrition, and HIV/AIDS, in a variety of countries.

DHS gender workshops emphasize hands-on use of demographic and health data to build users' capacity to conduct gender analysis and to integrate gender into interventions, policies, programs, and research. Participants leave with a deeper understanding of the importance of gender equity and why attention to gender enhances the ability to achieve specific development, health or demographic goals. ■

## DHS Questions Assess Empowerment and Gender-Related Attitudes

The DHS questionnaires include several questions that assess women's status and empowerment. For example:

Who in your family usually makes decisions about:

- Health care for yourself?
- Making major household purchases?
- Making purchases for daily household needs?
- Visits to your family or relatives?

Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:

- If she goes out without telling him?
- If she neglects the children?
- If she argues with him?
- If she refuses to have sex with him?
- If she burns the food?

SURVEYS	IMPLEMENTING ORGANIZATION
<b>SOUTH/SOUTHEAST ASIA</b>	
<b>Bangladesh 2004</b>	Mitra & Associates/NIPORT
2001 (Special)*	Mitra & Associates/ACPR/NIPORT
1999/2000	Mitra & Associates/NIPORT
1999/2000 (SPA)	Mitra & Associates/NIPORT
1996/97	Mitra & Associates/NIPORT
1993/94	Mitra & Associates/NIPORT
<b>Cambodia 2000</b>	National Institute of Statistics/MOH
1998	SAWA Cam./Nat. Inst. of Public Health
<b>India 1998–2003*</b>	Various Organizations
1998/99	International Inst. for Population Sciences
1992/93	International Inst. for Population Sciences
<b>Indonesia 2002</b>	Central Bureau of Statistics/NFPCB/MOH
2002 (Special)*	Central Bureau of Statistics
1997	Central Bureau of Statistics/NFPCB/MOH
1994	Central Bureau of Statistics/NFPCB/MOH
1991	Central Bureau of Statistics/NFPCB/MOH
1987	Central Bureau of Statistics/NFPCB
<b>Myanmar 1996 (Special)</b>	Settlt. and Land Rec. Dep., Min. of Agr.
<b>Nepal 2002–04 (Special)*</b>	New ERA
2001	New ERA
1996	Ministry of Health/New ERA
1987 (In-depth)	New ERA
<b>Pakistan 1990/91</b>	National Institute of Population Studies
<b>Philippines 2003</b>	National Statistics Office/Dept. of Health
1998	National Statistics Office/Dept. of Health
1993 (In-depth)*	National Statistics Office
1993	National Statistics Office
<b>Sri Lanka 1987</b>	Dept. of Cen. & Stat., Min. of Plan Impl.
<b>Thailand 1987</b>	Inst. of Pop. Studies, Chulalongkorn U.
<b>Vietnam 2002</b>	Comm. for Pop. Fam. & Children/Gen. Stat. Off.
1997	Nat. Comm. on Pop. and FP/Gen. Stat. Off.

## NORTH AFRICA/WEST ASIA/EUROPE

<b>Armenia 2000</b>	Nat. Stat. Service/MOH
<b>Egypt 2004 (SPA)</b>	El-Zanaty & Associates
2003 (Interim)	Min. of Health & Pop./El-Zanaty & Associates
2002 (SPA)	Min. of Health & Pop./El-Zanaty & Associates
2000	National Population Council
1998 (Interim)	El-Zanaty & Associates
1997 (Interim)	El-Zanaty & Associates
1996/97 (In-depth)*	National Population Council
1995	National Population Council
1992	National Population Council
1988	National Population Council
<b>Jordan 2002</b>	Department of Statistics
1997	Department of Statistics
1990	Department of Statistics
<b>Morocco 2003</b>	SEIS – Ministère de la Santé
1995 (Panel)	Ministère de la Santé Publique
1992	Ministère de la Santé Publique
1987	Ministère de la Santé Publique
<b>Tunisia 1988</b>	Office Nat. de la Fam. et de la Population
<b>Turkey 1998</b>	Hacettepe Inst. of Population Studies
1993	Hacettepe Inst. of Population Studies/MOH
<b>Yemen 1997</b>	Central Statistical Organization
1991/92	Central Statistical Organization

SURVEYS	IMPLEMENTING ORGANIZATION
<b>CENTRAL ASIA</b>	
<b>Kazakhstan 1999</b>	National Institute of Nutrition
1995	Inst. of Obst. & Ped., MOH
<b>Kyrgyz Republic 1997</b>	Settlt. and Land Rec. Dep., Min. of Agr.
<b>Turkmenistan 2000</b>	MCH/MOH/MIT
<b>Uzbekistan 2002 (Special)*</b>	Min. of Macroeconomics/MOH
1996	Inst. of Obst. & Gynec./MOH
<b>LATIN AMERICA &amp; CARIBBEAN</b>	
<b>Bolivia 2003</b>	Instituto Nacional de Estadística
1998	Instituto Nacional de Estadística
1993/94	Instituto Nacional de Estadística
1989	Instituto Nacional de Estadística
<b>Brazil 1996</b>	Soc. Civil Bem-Estar Familiar no Brasil
1991 (Northeast)	Soc. Civil Bem-Estar Familiar no Brasil
1986	Soc. Civil Bem-Estar Familiar no Brasil
<b>Colombia 2004-2005 (CAPI)</b>	PROFAMILIA
2000	PROFAMILIA
1995	PROFAMILIA
1990	PROFAMILIA
1986	PROFAMILIA
<b>Dominican Rep. 2002</b>	Corp. Cen. Reg. de Pob./Min. de Salud
1999 (Experimental)	CESDEM
1996	CESDEM
1991	CESDEM/PROFAMILIA
1986	PROFAMILIA
1986 (Experimental)	Consejo Nacional de Población y Familia
<b>Ecuador 1987</b>	Consejo Nacional de Población y Familia
<b>El Salvador 1985</b>	Cen. de Estud. de Pob. y Paternidad Responsable
<b>Guatemala 1998/99 (Interim)</b>	Asociación Demográfica Salvadoreña
1997 (In-depth)*	Instituto Nacional de Estadística
1997 (SPA)	Instituto Nacional de Estadística
1995	Instituto Nacional de Estadística
1987	Instituto Nacional de Estadística
<b>Haiti 2004</b>	Inst. de Nutrición de Cent. y Panamá
2000	Institut Haïtien de l'Enfance
1994/95	Institut Haïtien de l'Enfance
<b>Mexico 2000 (SPA)</b>	Institut Haïtien de l'Enfance
1987	Nat. Institute of Public Health
<b>Nicaragua 2001</b>	Dir. Gen. de Plan. Fam., Sec. de Salud
1997/98	Instituto Nacional de Estadísticas y Censos
<b>Paraguay 1990</b>	Instituto Nacional de Estadísticas y Censos
<b>Peru 2002–06 (Continuous)</b>	Centro Paraguayo de Estudios de Población
2000	Instituto Nacional de Estadística
1996	Instituto Nacional de Estadística
1992	Instituto Nacional de Estadística
1986	Instituto Nacional de Estadística
1986 (Experimental)	Instituto Nacional de Estadística
<b>Trinidad &amp; Tobago 1987</b>	Instituto Nacional de Estadística
	Family Planning Association of Trinidad/Tobago

## SURVEYS

## IMPLEMENTING ORGANIZATION

## SURVEYS

## IMPLEMENTING ORGANIZATION

### SUB-SAHARAN AFRICA

<b>Benin 2001</b> 1996	Institut Nat. de la Stat. et de l'Ana. Écon. Institut National de la Statistique
<b>Botswana 1988</b>	Ministry of Health
<b>Burkina Faso 2003</b> 1998/99 1992/93	Inst. Nat. de la Statistique et la Démo. Inst. Nat. de la Statistique et la Démo. Inst. Nat. de la Statistique et la Démo.
<b>Burundi 1987</b>	Dép. de la Pop., Min. de l'Intérieur
<b>Cameroon 2004</b> 1998 1991	DSCN and BUCREP Bur. Cen. Recensements et Études de Pop. Min. du Plan et de l'Amén. du Terr.
<b>Cape Verde 2004</b>	Instituto Nacional de Estatística
<b>Central African Rep. 1994/95</b>	Dir. des Stat. Dém. et Sociales
<b>Chad 2004</b> 1996/97	Inst. de la Stat., des Études Écon. et Démogra. Bureau Central du Recensement
<b>Comoros 1996</b>	Centre National de Doc. et de Rech. Sci.
<b>Congo-Brazzaville 2004</b>	Centre National de la Stat. et des Études Écon.
<b>Côte d'Ivoire 2004</b> 1998/99 1994	Inst. National de la Statistique Inst. National de la Statistique Inst. National de la Statistique
<b>Eritrea 2002</b> 1995	National Statistics and Evaluation Office National Statistics Office
<b>Ethiopia 2000</b>	Central Statistical Authority
<b>Gabon 2000</b>	Direction Générale de la Statistique
<b>Ghana 2003</b> 2002 (SPA) 1998 1993/94 1988	Ghana Statistical Service Ghana Statistical Service Ghana Statistical Service Ghana Statistical Service Ghana Statistical Service
<b>Guinea 2004</b> 1999 1992	Direction Nationale de la Statistique Direction Nationale de la Statistique Direction Nationale de la Statistique
<b>Kenya 2004 (SPA)</b> 2003 1999 (SPA) 1998 1993 1989	National Council for Population and Dev. Central Bureau of Statistics National Council for Population and Dev. National Council for Population and Dev. National Council for Population and Dev.
<b>Lesotho 2004</b>	Min. of Health and Social Welfare/Bur. of Stat.
<b>Liberia 1986</b>	Min. of Planning & Economic Affairs
<b>Madagascar 2003</b> 1997 1992	Institut Nat. de la Stat. Institut Nat. de la Stat. Centre Nat. de Recherches sur l'Env.
<b>Malawi 2004</b> 2000 1996 (KAP) 1992	National Statistical Office National Statistical Office National Statistical Office National Statistical Office
<b>Mali 2001</b> 1995/96 1987	CPS/MSSPA et DNSI CPS/MSSPA et DNSI CERPOD
<b>Mauritania 2003 (Special)</b> 2000/01	Office National de la Statistique Office National de la Statistique
<b>Mozambique 2003</b> 1997	Instituto Nacional de Estatística Instituto Nacional de Estatística
<b>Namibia 2000</b> 1992	Min. of Health and Social Services Min. of Health and Social Services

<b>Niger 1998</b> 1992	Care International Dir. de la Stat. et des Comptes Nat.
<b>Nigeria 2003</b> 1999- limited assistance 1990 1986 (Ondo State)	Nat. Pop. Commision Nat. Pop. Commision Federal Office of Statistics Ministry of Health, Ondo State Office National de la Population Office National de la Population Office National de la Population Office National de la Population Centre de Rech. pour le Dév. Humain
<b>Rwanda 2004</b> 2001 (SPA) 2000 1992	SERDHA Min. de l'Economie et des Finances Dir. de la Prévision et de la Stat. Min. de l'Economie et des Finances Dept. of Health Dept. of Health/Med. Research Council Dept. of Stat., Min. of Fin. & Econ. Plan.
<b>Senegal 2004</b> 1999 1997 1992/93 1986	National Bureau of Statistics National Bureau of Statistics National Bureau of Statistics Bureau of Statistics, Planning Comm. Bureau of Statistics, Planning Comm. Bureau of Statistics, Planning Comm.
<b>South Africa 2004</b> 1998	Direction de la Statistique Unité de Rech. Dém., Dir. de Stat., Dir. Gén. Santé Ministry of Health Uganda Bureau of Statistics Inst. Stat. & Applied Econ., Makerere U. Dept. of Stat., Min. Fin. & Econ. Plan. Ministry of Health Central Statistical Office Central Statistical Office University of Zambia Central Statistical Office Central Statistical Office Central Statistical Office
<b>Sudan 1990</b>	
<b>Tanzania 2004/5</b> 2003/04 (AIS) 1999 (Interim) 1996 1995 (In-depth)* 1994 (KAP) 1992	
<b>Togo 1998</b> 1988	
<b>Uganda 2004 (AIS)</b> 2000/01 1995/96 (In-depth)* 1995 1988	
<b>Zambia 2001/02</b> 1996 1992	
<b>Zimbabwe 1999</b> 1994 1988	

#### AIS: AIDS Indicator Survey

#### SPA: Service Provision Assessment

<b>*Bangladesh:</b>	Maternal Health Services and Maternal Mortality Survey
<b>*Egypt:</b>	Reasons for Nonuse in Upper Egypt
<b>*Guatemala:</b>	Health Expenditure Survey
<b>*India and Nepal:</b>	Benchmark Surveys/Various Topics
<b>*Indonesia:</b>	Young Adult Reproductive Health Survey
<b>*Philippines:</b>	Safe Motherhood Survey
<b>*Tanzania:</b>	Estimation of Adult and Childhood Mortality in a High HIV/AIDS Population
<b>*Uganda:</b>	Negotiating Reproductive Outcomes
<b>*Uzbekistan:</b>	Health Examination Survey



## Uzbek Adults Face Health Challenges

Obesity, hypertension and smoking are health challenges contributing to the high rate of heart disease and adult mortality in Uzbekistan, according to results of the 2002 Uzbekistan Health Examination Survey (UHES).

In addition to covering the reproductive and health topics usually found in a DHS survey, the 2002 UHES included a large range of adult health issues, such as chronic illness, dental health, smoking, and physical activity. In addition, the survey collected blood specimens to test for cholesterol, hepatitis B, diabetes, and chlamydia.

Cardiovascular disease is the leading cause of death in Uzbekistan, and interventions are needed to address risk factors. Over 50 percent of men and women over age 40 are overweight or obese, according to the UHES. High blood pressure and diabetes are much more common among those who are overweight. Smoking is rare among women, but one in five men currently smoke cigarettes.

### Trends in Childbearing

According to the UHES, fertility has decreased from 3.3 children per woman in 1996 to 2.9 children per woman in 2002. This decline is seen especially among women age 15–24. At the same time, women are waiting longer to marry and have children, and most currently married women are using a method of contraception (68 percent). Over 50 percent of married women use the IUD.

### Trends in Childhood Anemia

The 2002 UHES also looked at child health indicators. Almost one fourth of children between 6 months and 5 years were found to be moderately to severely anemic. In children age 12–23 months, anemia levels have gone up, from 30 percent in the 1996 DHS to 45 percent in the current survey. In all other age groups, anemia has gone down slightly. Anemia prevention efforts are currently underway in response to the survey findings. ■

## Child Vaccination Rate Low in Nigeria, Childhood Mortality High

Recent findings from the 2003 Nigeria Demographic and Health Survey (NDHS) show that only 13 percent of children under 2 years old are fully immunized. This is the lowest vaccination rate among the 22 sub-Saharan African countries in which DHS surveys have been conducted since 1998.

The World Health Organization recommends that children receive the full regimen of vaccinations (BCG at birth, 3 doses of DPT, 3 doses of polio vaccine and 1 dose of measles vaccine) by 12 months of age. In Nigeria, only 11 percent of children were fully immunized by 12 months. More than one-quarter of Nigerian children age 12–23 months had received none of the recommended vaccines at the time of the survey.

Child mortality is also high in Nigeria, at 109 deaths per 1,000 live births. Under-five mortality is 217 deaths per 1,000 live births, meaning that more than one in five children dies before their fifth birthday. Mortality is highest among children who were born less than 2 years after a previous child and those whose mothers were less than 20 years old at the time of birth.

Childhood mortality is also highly correlated with women's status. In households where women share household decision making (such as what food to cook, decisions about household purchases and visits to family members), children had much lower childhood mortality (181 per 1,000 live births, compared with 249 deaths per 1,000 live births among those who had no final say in any decisions). ■

## DHS Staff Present Data at Workshop for Journalists at AIDS Conference in Bangkok

MEASURE DHS staff presented DHS data to 25 journalists and journalism professors from 13 countries at the beginning of a 3-day conference preceding the XVth International AIDS Conference in Bangkok, Thailand. Workshop attendees were media scholarship winners and other journalists from African and Asian countries. The workshop, "Journalist to Journalist: The Global Media Responds to HIV/AIDS," was organized by the National Press Foundation with funding from the Bill & Melinda Gates Foundation, Merck Company Foundation, and others. Workshop topics included HIV/AIDS epidemiology, prevention, and AIDS orphans.

Bernard Barrère, Coordinator for HIV/AIDS at DHS, and Daniel Vadnais, Deputy Advisor for Communication at DHS, led a 90-minute session entitled "Tracking HIV/AIDS: Numbers that Count." The presentation led journalists through HIV/AIDS and health definitions, as well as a brief history of the AIDS epidemic. Journalists were introduced to various types of sources for tracking HIV/AIDS. They were also presented with a description of the two main means of estimating HIV seroprevalence: sentinel surveillance and population-based surveys. Differences between these two sources were explored. The presentation also summarized the history of HIV questions and testing in the Demographic and Health Surveys and concluded with current testing protocols, HIV prevalence data, and the schedule of HIV testing currently underway in DHS surveys. ■



## DHS Data at Work

### Nursing Council of Kenya Integrates DHS Data Into Training

The Nursing Council of Kenya (NCK) has recently developed a training module based upon the Kenya Demographic and Health Survey. Developed by lecturers from the Kenya Medical Training College, Kenyatta University, and the University of Nairobi, the module is designed to teach nurses the technical terms used in public health survey research, the major findings from the KDHS, and ways the information can be integrated into clinical and community care.

NCK has pretested the training module with all Provincial Nursing Officers in Kenya and nursing lecturers. Plans are under way to provide the module to training institutions nationwide. In addition, the National Steering Committee for Continuing Medical Education has accepted the module for use in in-service training.

### DHS Data Used to Show Linkage Between Dietary Diversity and Nutritional Status

A study published this October in the *Journal of Nutrition* uses data from 11 Demographic and Health Surveys to examine the relationship between dietary diversity and children's nutritional status. The DHS provides information on children's dietary intake and anthropometric measures of nutritional status, as well as other household indicators such as wealth and education that may be associated with nutritional status and food diversity.

Results showed that regardless of household income

and other socioeconomic factors, dietary diversity was associated with higher weight-for-height scores in 7 of the 11 countries. This implies that dietary diversity may reflect diet quality and therefore be an important intervention in improving children's nutritional status.

### Surveys Effect Change in Central Asia

DHS data have been used in the creation of programs and policies to address various health issues in Kazakhstan, Kyrgyz Republic, Turkmenistan and Uzbekistan. DHS testing of salt iodization was a stimulant to iodisation programs and proposed legislation mandating the iodization of salt in all the Central Asian Republics. DHS also provides the only measure of iron-deficiency anemia. Results have encouraged the creation of anemia prevention and iron supplementation programs, including wheat flour fortification in Uzbekistan and Turkmenistan.

Prior to the DHS, the only measure of infant mortality in Central Asia was through government statistics, which only included registered deaths. DHS found infant mortality to be much higher than expected, leading to the redevelopment of programs for antenatal care and postnatal child care.

### PRB Wealth Analysis Uses DHS Data

The Population Reference Bureau recently published a wall chart and policy brief entitled "The Wealth Gap in Health" based on the DHS wealth index. These materials can be ordered at [www.prb.org](http://www.prb.org). ■

## DHS Questionnaire Undergoes Redesign, New Modules Forthcoming

The core household and woman's questionnaires used for the Demographic and Health Surveys have recently undergone significant revisions to reflect emerging needs in health, population and nutrition. The household questionnaire has added questions on birth registration, water purification, sharing of toilet facilities, type of cooking stove and ventilation, and security of tenure. Questions to assess household wealth have also been expanded (for example, families are now asked whether they own appliances, furniture, livestock, and agricultural land). Water and sanitation questions were adapted to be harmonized with questions on the UNICEF Multiple Indicator Cluster Surveys.

The woman's questionnaire, which includes information on family planning, reproductive health, children's health, nutrition, HIV/AIDS and gender roles, has also been expanded to include more detail. For example, the family planning section now includes a question on whether or not a woman's husband knows she is using contraception. Questions on antenatal care, diarrhea and ARI prevalence and treatment and children's food consumption have also been expanded.

The revised woman's questionnaire also includes significantly more detail on sexual activity and HIV/AIDS. Unmarried women are now asked about intentions to remain abstinent until marriage, and sexually active women are asked about alcohol use during sex and age mixing of sexual partners. Questions on HIV-related stigma and misconceptions have been revised, and women are now asked if they know of a place to get an HIV test. The revised DHS questionnaire probes more deeply into women's health issues through questions on injections and needle safety and knowledge of tuberculosis. Women are also asked to provide more information on gender roles and power in the household.

The process of questionnaire revision has been very inclusive, involving key stakeholders from more than 75 organizations, including USAID and cooperating agencies, other development partners, NGOs, PVOs, academic institutions, and in-country counterparts.

Revisions of the men's questionnaire and the other questionnaire modules are planned for the near future. New modules on environmental health and contraceptive security are currently being developed. ■

# MEASURE DHS Visitors and Events

## February 2004

Geographic Information Systems (GIS) specialist Livia Montana visited the West Bank and Gaza to provide technical assistance to the Ministry of Health and Ministry of Planning.

Livia Montana also visited Jordan to carry out a workshop with the Ministry of Health for the GIS project. Montana led a three day workshop with MOH staff from the Information, Disease Control and Maternal and Child Health Directorates.

Sunita Kishor was in Atlanta for a 2-day meeting on Women and Infectious Diseases. She made a presentation on women's status and sexually transmitted disease in Zambia.

## March 2004

Annie Cross organized and assisted in a report-writing workshop in Nakuru, Kenya. A total of 23 Kenyans from 7 organizations participated, drafting 14 of the 15 chapters of the report.

Sam Ogunlade and H. Avong from the National Population Commission of Nigeria visited ORC Macro to finalize the 2003 Nigeria final report and prepare for its dissemination.

Jerry Sullivan spent two weeks in the Philippines for the final report writing workshop for the 2003 PDHS.

Shea Rutstein went to Egypt for the Catalyst Consortium Meeting attended by 190 participants from 13 countries. It focused on the use of a period of reference of 3 to 5 years as a recommended birth interval, rather than the current "2 years or more."

## April 2004

Livia Montana taught a GIS workshop in Phnom Penh as part of the project with the Cambodian Ministry of Health. It was attended by 16 participants from the MOH.

Annie Cross made a presentation on HIV prevalence rates and response rates from the Kenya DHS at a seminar organized by CDC/Kenya to establish the officially recognized HIV prevalence for Kenya.

Altrena Mukuria conducted a training workshop on the Use of Data for Policy Planning and Advocacy for the Commonwealth Regional Health Secretariat in Kampala, Uganda. Participants were trained in accessing and interpreting data from various DHS dissemination tools and applying DHS data to health policy planning and advocacy.

Stan Yoder spent 3 weeks in Tanzania to evaluate how respondents understood certain questions in the AIDS Indicator Survey and to revise questions that were not well understood.

Jerry Sullivan was in Bratislava, Slovak Republic, for a UNFPA conference on the results of 15 USAID-funded surveys in Eastern Europe and Eurasia. Jerry Sullivan and staff from the CDC Reproductive Health Division gave a series of presentations.

## May 2004

Pav Govindasamy traveled to Ghana to lead the final report writing workshop for the 2003 Ghana DHS.

Alfredo Fort and Annie Cross traveled to New York for a two-day meeting convened by WHO/UNICEF. The goal of the meeting was to reach a consensus on which child survival indicators should be gathered in countries to monitor global progress toward child health.

## June 2004

Livia Montana traveled to Jordan and the West Bank/Gaza to conduct GIS training workshops for the Ministry of Health staff.

At the invitation of AIDOS, a women's rights NGO, Stan Yoder spent several days in Rome to present a paper on the challenges of collecting data on FGC in African countries and in Italy.

Laurie Liskin served as a facilitator at the WHO Implementing Best Practices conference in Entebbe, Uganda. The conference was designed to help country teams from 9 countries facilitate local implementation of WHO guidelines for family planning and reproductive health care.

## July 2004

Daniel Vadnais and Bernard Barrère went to Bangkok for the 15th International AIDS Conference. They arrived early to present at a workshop "Journalist to Journalist" organized by the National Press Foundation (see article on page 8).

## August 2004

Ruilin Ren attended the 2004 Joint Statistical Meeting in Toronto, Canada. He presented an invited paper on Outlier Robust Imputation of Survey Data.

Visitors from Burkina Faso arrived at the Macro offices in Calverton, Maryland, to work for several weeks on the writing of the Burkina Faso final report as well as the creation of dissemination materials.

Visitors from Turkey also visited the DHS office to work on the final report for the 2003 Turkey DHS.

## September 2004

Stan Yoder spent three days at WHO in Geneva to meet with personnel from the Department of Reproductive Health and Research (RHR), and with the Department of HIV/AIDS.

## October 2004

Fred Arnold traveled to Geneva for a meeting of the Technical Advisory Group of the WHO/UNICEF Joint Monitoring Program on Water Supply and Sanitation. He gave a presentation on future household surveys in a session on Monitoring Drinking Water and Sanitation Coverage and Hygiene Behavior. ■

## New Publications

<b>Bangladesh</b>	2001 Maternal Health Services and Maternal Mortality Survey Final Report
<b>Burkina Faso</b>	2003 DHS Final Report (French)
<b>Egypt</b>	2003 Interim DHS Final Report
<b>Ghana</b>	2003 DHS Final Report
<b>Kenya</b>	2003 DHS Final Report
<b>Mauritania</b>	2003–2004 Infant Mortality and Malaria Survey (French)
<b>Nigeria</b>	2003 DHS Final Report
<b>Philippines</b>	2003 DHS Final Report
<b>Uzbekistan</b>	2002 Health Examination Survey Final Report (English and Russian)

### Analytical Studies

Westoff, C. 2004. *Recent Trends in Abortion and Contraception in 12 Countries*. AS8.

### Comparative Reports

Rutstein, S.O. and K. Johnson. 2004. *The DHS Wealth Index*. CR 6.

### Geographic Studies

Matthews, S.A. and B. Gubhaju. 2004. *Contextual Influences on the Use of Antenatal Care in Nepal*. GS2.

### Qualitative Research Studies

Yoder, P.S. and P. Matinga. 2004. *Voluntary Counselling and Testing (VCT) for HIV in Malawi: Public Perspectives and Recent VCT Experiences*. QRS8.

Gordon, A. et al. 2004. *Signs of Illness, Treatment, and Support for Young Children in Guinea: A Prospective Community Study*. QRS9.

### Gender Reports

Kishor, S. and K. Johnson. 2004. *Profiling Domestic Violence: A Multi-Country Study*. OD31.

Kishor, S., ed. 2004. *Focus on Gender: Collected Papers Using DHS Data*. OD32.

### GIS Reports

National Institute of Statistics, Directorate General for Health [Cambodia], and ORC Macro. 2004. *Cambodia: Atlas of Health Indicators*.

Department of Statistics [Jordan] and ORC Macro. 2004. *Jordan: Atlas of Health Indicators*.

### EdData

ORC Macro. 2004. *DHS EdData Education Profiles*. Series of 24.

### Further Analysis

Johnson, K. 2004. *Mistimed and Unwanted Pregnancies in Jordan*. FA44.

## Final Reports Coming Soon

**Bangladesh DHS Survey 2003–2004**

**Bolivia DHS Survey 2003 (Spanish)**

**Egypt Service Provision Assessment (SPA) Survey 2004**

**Morocco DHS Survey 2003–2004**

**Mozambique DHS Survey 2003 (Portuguese)**

**All DHS publications may be downloaded or ordered online at**  
**<http://www.measuredhs.com>**

## New and Upcoming Qualitative Research

A qualitative study on signs of childhood illness in Guinea is being published this month. Investigators observed 155 children under age 5 to understand how adults recognized and responded to illness signs. Results suggest ways that social and medical services could intervene to better manage childhood illness.

A study on the understanding of questions in the AIDS Indicator Survey (AIS) in Tanzania is also forthcoming. This study examines the questionnaire used in

the Tanzania AIS (completed in March 2004) to evaluate the degree to which respondents understood questions relating to sexual activity and HIV/AIDS. Results provide guidance for the upcoming Tanzania DHS as well as AIS in other countries.

A qualitative study is being designed in Uganda to investigate how respondents in a survey react to the option of getting their HIV test results at a static health facility versus from a mobile VCT team or in their own home. ■



# Selected Statistics From DHS Surveys

SURVEYS	VITAL RATES			USE OF CONTRACEPTION (Currently Married Women 15–49)		MATERNAL CARE (Births in Last 5 Years)		CHILD HEALTH INDICATORS		
	Total Fertility Rate <sup>a</sup>	Total Wanted Fertility Rate <sup>a</sup>	IMR/Under-5 Mortality Rate <sup>b</sup>	% Currently Using Any Method <sup>c</sup>	% Currently Using Any Modern Method <sup>d</sup>	% Women Receiving Antenatal Care <sup>e</sup>	% Women Receiving Assistance at Delivery from Professional <sup>e</sup>	Median Duration (Months) of Breast-feeding <sup>f</sup>	% Children 0–59 Months Stunted <sup>g</sup>	% Children Fully Immunized <sup>h</sup>
<b>CENTRAL ASIA</b>										
Kazakhstan 1999	2.1	1.9	62/71	66	53	94	99	7	10	81
Turkmenistan 2000	2.9	2.7	74/94	62	53	98 <sup>i</sup>	97	18	22	90
Uzbekistan 2002	2.9	†	‡	68	63	†	†	‡	21	†
<b>LATIN AMERICA/CARIBBEAN</b>										
Bolivia 1998	4.2	2.5	67/92	48	25	65	57	18	26 <sup>m</sup>	26
Colombia 2000	2.6	1.8	21/25	77	64	91 <sup>i</sup>	86	13	14	52 <sup>o</sup>
Dominican Rep. 2002	3.0	2.3	31/38	70	66	98	98	7	9	35
Guatemala 1999	5.0	4.1	45/59	38	31	60	41	20	46	60
Haiti 2000	4.7 <sup>b</sup>	2.7 <sup>b</sup>	80/119	28	22	79	24	19	23	34
Nicaragua 2001	3.2	2.3	31/40	69	66	86	67	17	20	72 <sup>p</sup>
Peru 2000	2.9	1.8	33/47	69	50	84 <sup>i</sup>	59	22	25	66 <sup>p</sup>
<b>NORTH AFRICA/WEST ASIA/EUROPE</b>										
Armenia 2000	1.7	1.5	36/39	61	22	92 <sup>i</sup>	97	9	13	76
Egypt 2002	3.2	2.5	38/46	60	57	69	69	19	16	88
Jordan 2002	3.7	2.6	22/27	56	41	99	100	13	9	94 <sup>q</sup>
Turkey 1998	2.6	1.9	43/52	64	38	68	81	12	16	46
<b>SOUTH/SOUTHEAST ASIA</b>										
Bangladesh 2000	3.3	2.2	66/94	54	43	33 <sup>i</sup>	12	31 <sup>k</sup>	45	60
Cambodia 2000	4.0 <sup>b</sup>	3.1 <sup>b</sup>	95/124	24	19	38 <sup>i</sup>	32	24	45	40
India 1999	2.9	2.1	68/95	48	43	65 <sup>j</sup>	42 <sup>j</sup>	25	47 <sup>n</sup>	42
Indonesia 2003	2.6	2.2	35/46	60	57	92 <sup>i</sup>	66	22	†	51
Nepal 2001	4.1	2.5	64/91	39	35	49	13	33	51	66
Philippines 2003	3.5	2.5	29/40	49	33	88 <sup>i</sup>	60	14	†	70
Vietnam 2002	1.9	1.6	18/24	79	57	86 <sup>j</sup>	85 <sup>j</sup>	18	†	67
<b>SUB-SAHARAN AFRICA</b>										
Benin 2001	5.6	4.6	89/160	19	7	87	73	22	31	59
Burkina Faso 2002–2003	6.2	5.4	81/184	14	9	73	57	25	39	44
Cameroon 1998	5.2 <sup>b</sup>	4.6 <sup>b</sup>	77/151	19	7	79 <sup>i</sup>	58 <sup>i</sup>	18	29 <sup>n</sup>	36
Côte d'Ivoire 1999	5.2	4.5	112/181	15	7	84	47	21	25	51
Eritrea 2002	4.8	4.4	48/93	8	7	70	28	22	38	76
Ethiopia 2000	5.9 <sup>b</sup>	4.9 <sup>b</sup>	97/166	8	6	27 <sup>i</sup>	6	26	52	14
Gabon 2000	4.3 <sup>b</sup>	3.5 <sup>b</sup>	57/89	33	12	95 <sup>i</sup>	87	12	21	17
Ghana 2003	4.4 <sup>b</sup>	3.7	64/111	25	19	92	47	23	30	69
Guinea 1999	5.5	5.0	98/177	6	4	71	35	22	26	32
Kenya 2003	4.9	3.6	77/115	39	32	90	42	21	30	57
Malawi 2000	6.3	5.2	104/189	31	26	91 <sup>i</sup>	56	24 <sup>i</sup>	49	70
Mali 2001	6.8	6.1	113/229	8	6	57 <sup>i</sup>	41	23	38	29
Mauritania 2001	4.7 <sup>b</sup>	4.3 <sup>b</sup>	74/116	8	5	65 <sup>i</sup>	57	21	35	32
Mozambique 2003	5.5	4.9	101/153	17	12	85	48	22	41	63
Namibia 2000	4.2	3.4	38/62	44	43	91	78	15	24	65
Niger 1998	7.5 <sup>b</sup>	7.2 <sup>b</sup>	123/274	8	5	40 <sup>i</sup>	44 <sup>i</sup>	21	41 <sup>n</sup>	18
Nigeria 2003	5.7	5.3	109/217	13	8	63	36	18	38	13
Rwanda 2000	5.8	4.7	107/196	13	4	92 <sup>i</sup>	31	33 <sup>i</sup>	43	76
South Africa 1998	2.9	2.3	45/59	56	55	94	84	16	†	63
Tanzania 1999	5.6	4.8	99/147	25	17	93 <sup>i</sup>	36	21	44	68
Togo 1998	5.2	4.2	80/146	24	7	82 <sup>j</sup>	51 <sup>j</sup>	24	22	31
Uganda 2001	6.9	5.3	88/152	23	18	92 <sup>i</sup>	39	22 <sup>i</sup>	39	37
Zambia 2002	5.9	4.9	95/168	34	23	93	43	21	47	70
Zimbabwe 1999	4.0	3.4	65/102	54	50	93 <sup>i</sup>	73	20	27	75

† Not available from survey data.

‡ Not available until publication of final report.

a Based on 3 years preceding survey (women 15–49).

b Based on 5 years preceding survey.

c Excludes prolonged abstinence.

d Excludes periodic abstinence, withdrawal, “other.”

e Care provided by medically trained personnel.

f Children <3 years old (any breastfeeding).

g Height-for-age z-score is below –2 SD based on the NCHS/CDC/WHO reference population.

h Children 12–23 months vaccinated (BCG, measles, three doses each DPT and polio).

i Based on last birth.

j Based on births in the preceding 3 years.

k Based on births in the preceding 4 years.

l Children 0–59 months old.

m Children 3–35 months old.

n Children 0–35 months old.

o Excludes measles.

p Children 18–29 months old.

q Excludes BCG.

For more indicators, and to build custom tables with DHS data, visit the STATcompiler at [www.measuredhs.com](http://www.measuredhs.com)